

Amendments to the Abstract:

Please replace the abstract with the following new abstract:

A data transmission apparatus used in a multiple service ring is described. The apparatus includes at least two nodes coupled to at least one aggregate pipe and at least one tributary. The apparatus also includes a tributary TX framer for converting data received from the tributary, a transmission setup module for setting up information for processing protocol packets to be transmitted, a TX framer for encapsulating the information into frames of the MSR and transmitting the same along the aggregate pipe to a downstream neighbor node in the ring, and a RX framer for receiving and deframing data frames of the MSR from an upstream neighbor node. The apparatus also includes a transiting module for transiting the frames to the TX framer, a destination tributary determining module for determining a destination tributary, and a tributary RX framer for converting and sending protocol packets to a corresponding tributary.